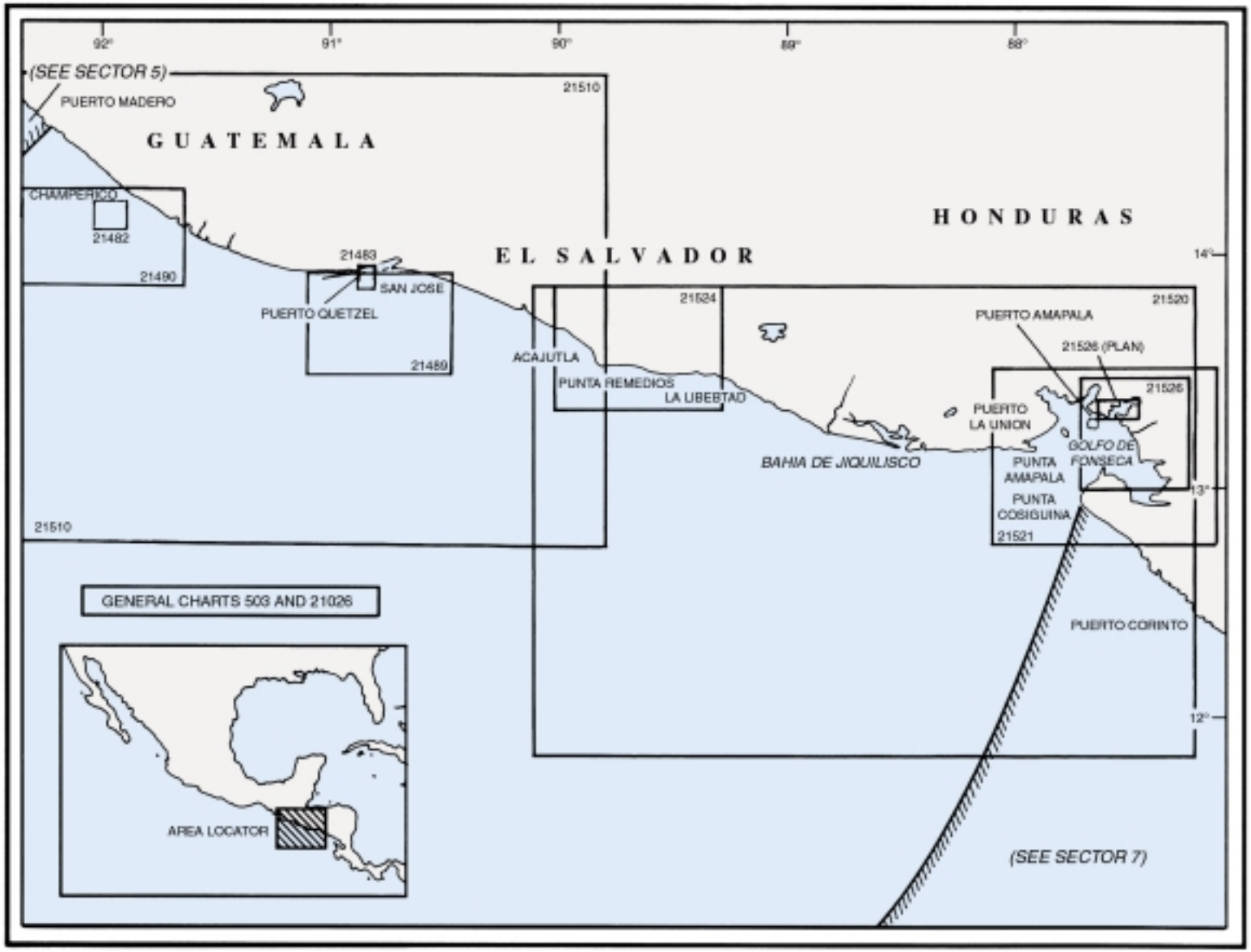

Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **6** — CHART INFORMATION

Table of Contents

SECTOR 6

COASTS OF GUATEMALA, EL SALVADOR, AND HONDURAS, INCLUDING GOLFO DE FONSECA

Plan.—This sector describes the coasts of Guatemala, El Salvador, and Honduras, including Golfo de Fonseca. The descriptive sequence is SE.

General Remarks

6.1 Winds—Weather.—From December to May, the gentle NE trade system predominates with winds usually between NE and NW. From May to November, the equatorial belt of calms lies farther N and winds from the S and W predominate. During this season, land and sea breezes are common, with occasional SW squalls. This period coincides with the rainy season and frequent thunderstorms blow from the W and SW. The violent, local squalls that occur in connection with these thunderstorms are known as "Chubascos."

Winds from the N are common in the cool season. Along this coast, the wet and dry seasons are well defined. The rainy season lasts from May to November and the remainder of the year constitutes the dry season. In some sections along the middle of this area, a decrease in rainfall occurs for several weeks during the summer. This dry spell is known as the "Veranillo." Much of the rainfall along this coast occurs in the form of thundershowers.

Tides—Currents.—The current along this part of the coast generally sets W, but its direction is often affected by eddies in local areas. There is evidence that the position of these eddies varies from one year to the next and the regularity of the currents cannot be relied on. Vessels are cautioned to give the points located along the coast a wide berth.

Caution.—It has been reported (1998) that as a result of Hurricane Mitch all marine navigational aids along the Honduran coast have either been destroyed or are unreliable. For further details, local authorities should be consulted.

Rio Suchiate to Acajutla

Rio Suchiate (14˚33'N., 92˚14'W.) marks the approximate boundary between Mexico and Guatemala and separates the towns of Tecun Uman, the terminus of the Guatemalan railroad, and Suchiate, 3 miles W.

Rio Ocos (14˚31'N., 92˚12'W.) discharges into the sea about 10 miles SE of the mouth of the Rio Suchiate. The small village of Ocos is situated on the W side of the entrance and is fronted by a derelict pier. Vessels, with cargo to be landed, usually anchor during the day in a depth of 9m close off the village. At night, vessels anchor about 1 to 2 miles offshore.

The coast in this vicinity is subject to frequent changes due to earthquakes and vessels should approach Rio Ocos with caution.

The coast between the Rio Ocos and Champerico, 19 miles SE, consists of a narrow strip of sandy beach backed by a series of lagoons.

Champerico (14˚18'N., 91˚56'W.)

World Port Index No. 15680

6.2 The port of Champerico consists of an open roadstead where cargo is loaded and discharged from lighters.

Tides—Currents.—The tide rises about 2.1m at springs and 2m at neaps.

During the dry season (November through April), the current in this vicinity usually sets ESE at a rate of 0.5 knot. However, the current will occasionally set ESE for 3 or 4 days and then set in the opposite direction for the same length of time. From July to August, a WNW current, with a rate of over 0.5 knot, predominates.

Depths—Limitations.—The approach to the roadstead is deep and clear. A lighter pier, 216m long, fronts the town and has a depth of 4.6m alongside its outer end.

Aspect.—The warehouses and buildings standing in the town can be seen for a considerable distance. A light is shown from a tower, surmounting a concrete tank, in the N part of the town. A conspicuous stranded wreck lies 1 mile E of the lighter pier. A spherical water tower is situated about 0.2 mile ENE of the head of the pier and is conspicuous.

Anchorage.—Anchorage can be taken in a depth of 12m about 0.9 mile SSW of the head of the lighter pier. It is advisable to anchor farther seaward during extreme surf conditions and during the rainy season when local storms occur without warning.

Caution.—Heavy rollers, which break in a depth of 7m, occasionally set in from the S during a flat calm at full or new moon.

6.3 San Luis (14˚11'N., 91˚46'W.) is situated at the mouth of the Rio Samala, 12 miles SE of Champerico. This settlement may be recognized by two large sheds with huts on either side. A reef, which breaks, is reported to lie 2 to 4 miles offshore along the coast for a distance of about 6 miles abeam of the mouth of the river. Shallow depths were reported (1916) to lie seaward of this reef and vessels should give the area a wide berth. A dangerous rock was reported (1912) to lie about 5 miles S of San Luis.

Vessels with local knowledge may anchor off San Luis during the dry season, from November to April, but at other times the anchorage should be avoided.

Sesecapa (Nuevo Venecio) (14˚06'N., 91˚37'W.), an open roadstead, lies about 10 miles SE of San Luis and is occasionally used by vessels for loading cargo.

San Jeronimo (13˚55'N., 91˚11'W.), a small village, consists of several huts and one large warehouse. Good anchorage can be taken in depths of 11 to 15m off this village during the dry season. Lighters for working cargo can be obtained from either Champerico or San Jose.

6.4 **San Jose** (13˚55'N., 90˚50'W.) (World Port Index No. 15670), an open roadstead, serves by rail the city of Guatemala, which stands 72 miles inland. No alongside berthing facilities are provided and very little cargo is reported to be handled.

Depths—Limitations.—A molasses pier, 274m long, fronts the town and has a depth of 9.1m alongside its outer end. Several mooring buoys are situated off the head of the of pier. It was reported (1990) that this pier was in a poor state of repair.

Three offshore tanker berths, consisting of several mooring buoys, lie 1.5 miles W of the pier and are connected to the shore by a submarine pipeline. Vessels with drafts of up to 9m can be handled at this offshore facility.

Aspect.—Volcano Agua and Volcano Fuego, both conspicuous peaks, rise about 32 miles N of San Jose. Volcano Agua, 3,759m high, is shaped like a perfect cone. Volcano Fuego, 3,841m high, consists of two summits of nearly equal size and appearance. Square Rock, 457m high, stands 25 miles NNW of the town and forms an excellent landmark when the other peaks are obscured by haze.

During hazy weather, the town may be identified by the break in the thick green vegetation. In clear weather, a white warehouse, situated on the beach, and another warehouse, situated on the end of the pier, are prominent. Several oil tanks stand 2 miles W of the pier. A conspicuous water tower is situated 0.5 mile NNW of the pier.

A prominent stranded wreck lies 0.4 mile W of the pier. A light is shown from a structure standing near the outer end of the pier. Another light is shown from the airport tower situated 1 mile NW of the port. An aero radiobeacon is situated 6 miles ENE of the light.

A river mouth lies 5.3 miles W of San Jose and is protected by breakwaters, which are visible from seaward in all weathers.

Pilotage.—Pilotage is not required for anchoring. Pilots are required for tankers proceeding to the offshore terminal and are available by day from Puerto Quetzal.

Anchorage.—Anchorage can be taken in a depth of 20m about 0.6 mile S of the head of the pier. The bottom is sandy, but the holding ground is not good. At night, vessels should not anchor close in as unlit barges normally moor off the pier. Anchorage farther seaward is advisable during extreme surf conditions and during the rainy season when "Chubascos" are liable to occur without warning.

Three dangerous wrecks lie within 0.2 mile of the head of the pier.

Caution.—A foul ground area lies centered 0.4 mile S of the head of the pier. Numerous anchors and cables are reported to lie within this area.

Shoals, with a least depth of 14.6m, lie 1 mile SSW and 2 miles S of the pier.

During February, March, and April, the port is reported to be difficult to identify at daybreak due to the smoke caused by the burning of brush and vegetation.

Puerto Quetzel (13˚55'N., 90˚48'W.)

World Port Index No. 15660

6.5 Puerto Quetzel is the principal port of Guatemala on the Pacific coast. It is protected by breakwaters and constructed around a natural lagoon. The commercial facilities lie at the E side of the harbor and a basin used by naval and small craft lies at the W side.

Winds—Weather.—Generally, the wind blows from between SSE and W from 1000 to 2100. After a short calm, the wind then veers to between NW and N. Winds from the S, accompanied by heavy squalls and frequent rains, prevail from about the middle of June to October.

Tides—Currents.—The tides rise about 1.8m at springs and 1.5m at neaps.

During the dry season, the current mostly sets ESE at a rate of about 0.5 knot at springs. However, the current frequently alternates between ESE and WNW, running in each direction for 3 or 4 days at a time. From June to August, a current setting WNW at a rate of 0.5 knot predominates.

A strong E to NE set, at a rate of 0.5 to 1.5 knots, caused by winds and sea swell, was reported (1998) in the approach outside the breakwaters.

Depths—Limitations.—The W breakwater projects 450m SSE and then 600m ESE from the shore. The E breakwater extends 300m S from the shore. The port entrance is 350m wide. An inner breakwater extends 365m W from the root of the E breakwater. A turning basin, 400m in diameter, lies close inside the entrance.

The entrance channel and turning basin are dredged to a depth of 12m.

Muelle Principal, the main quay, is 800m long and has a depth of 11m alongside. Muelle Sur is 170m long and has a depth of 5m alongside.

There are facilities for general cargo, bulk, ro-ro, container, and cruise vessels. Vessels of up to 210m in length, 32m beam, and 10.5m draft can be accommodated.

Aspect.—The entrance fairway is marked by lighted buoys and indicated by a lighted range. The N and S breakwaters are lighted.

Pilotage.—Pilotage is compulsory. Pilots can be contacted by VHF and board in the vicinity of the Fairway Lighted Buoy.

Anchorage.—A designated anchorage area, with nine berths, lies centered 1 mile S of the W breakwater. This area has depths of 19 to 28m with moderately good holding ground although exposed to considerable swell.

Caution.—It has been reported that aids to navigation may be obscured by anchored vessels.

Iztapa (13˚55'N., 90˚38'W.), an open roadstead, lies 6 miles E of San Jose, at the mouth of a river. It is now a resort and is of little importance.

Anchorage can be taken in depths of 20 to 24m, mud and sand, about 0.5 mile offshore.

The coast between Iztapa and Fondeadero Acajutla, 51 miles ESE, consists of a grayish, sandy beach broken by the entrances of several small rivers. Several villages stand near the shore along this stretch of coast and have been reported to be useful landmarks.

Rio Paz (13˚45'N., 90˚08'W.), one of the larger rivers, lies 36 miles ESE of Iztapa and marks the approximate boundary between Guatemala and El Salvador. A shoal, with a depth of 10m, is reported to lie 12 miles SW of the mouth of this river.

Acajutla (13˚35'N., 89˚50'W.)

World Port Index No. 15640

6.6 The port of Acajutla, a primary export center for locally grown coffee, lies 20 miles SE of Rio Paz and is exposed to W winds. It serves the region of Santa Ana in the W part of El Salvador. The town, a popular resort, includes an extensive industrial complex comprised of a cement factory, an oil refinery, and a grain silo.

Winds—Weather.—Strong W winds usually raise a heavy sea at the exposed anchorage and cause surging at the piers. Mooring lines are frequently parted. Chubascos, violent thundery squalls, are frequent during the wet period, May to October.

Tides—Currents.—The tides rise about 1.8m at springs and 1.5m at neaps.

The offshore current in this vicinity usually sets in an E direction at a rate of 0.5 knot.

Depths—Limitations.—The port consists of a breakwater which extends 480m W, then 300m NW, and finally 300m NNW from the shore. A finger pier, 360m long, extends NW from midway along the first section of the breakwater.

An offshore tanker berth, consisting of a cluster of mooring buoys, lies in a depth of 15m, 0.8 mile S of the breakwater, and is connected to the shore by a submarine pipeline. Tankers of up to 226m in length and 12m draft can be handled.

The breakwater and finger pier provide eight berths, with depths of 7.9 to 14.6m alongside, for general cargo, bulk, and container vessels. Generally, vessels of up to 40,000 dwt, 250m in length, and 12m draft can be accommodated.

Aspect.—A light is shown from a framework tower, 7m high, standing at Puerto Viego, the old part of the town, 0.5 mile ENE of the breakwater head.

A light is shown from the head of the breakwater.

An outer lighted buoy is moored about 2 miles SW of the breakwater head.

Pilotage.—Pilotage is compulsory and available by day and at night. Pilots can be contacted by VHF and board between 1 and 2 miles from the harbor entrance. Vessels should send an ETA to their agents 96, 48, 24, and 12 hours in advance.

Anchorage.—Vessels can anchor almost anywhere off the port. Cargo vessels usually anchor about 1 mile NW of the head of the breakwater. Tankers are advised not to anchor, but to remain underway and within VHF range.

Caution.—Unlit barges frequently anchor within 0.5 mile of the breakwater.

Two shoal patches, with depths of 5.9 to 8m, are reported to lie about 0.8 mile NNW of the breakwater head.

An underwater obstruction is reported to lie about 0.7 mile SSW of the offshore tanker berth.

Less depths than charted were reported (1995) to lie alongside the breakwater.

Vessels should always have their engines available at short notice in order to leave the berth due to heavy swell. During such periods, vessels usually remain underway and within VHF range.

From May to October, vessels should maintain a radar watch from 2 hours before sunset until sunrise in order to detect incoming squalls. If there is evidence of a Chubasco within 25 miles of the port, all operations are ceased. Vessels are requested to maintain a minimum mean draft of 6m at all times.

It has been reported that navigational aids and small craft are difficult to identify against the background of lights shown from the industrial complex.

Acajutla to Golfo de Fonseca

6.7 Punta Remedios (13˚31'N., 89˚48'W.), marked by a light, is low, cliffy, and thickly covered with mangroves. A foul area, with reefs and rocks, extends up to 2.5 miles seaward of the point and may best be seen on the chart.

A stranded wreck, with its hull visible at all stages of the tide, lies about 2.3 miles WNW of the point and was reported (1985) to be conspicuous.

Caution.—The waters in the vicinity of Punta Remedios have not been closely surveyed and vessels are advised to pass not less than 4 miles off the point when transiting from the E. When the point bears NE, vessels should keep in a depth of not less than 18m as they proceed up the coast.

Sacasa Rock (13˚28'N., 89˚47'W.) lies about 3.5 miles SSE of Punta Remedios, but its position is doubtful. The sea breaks occasionally over this rock at LW.

The coast between Punta Remedios and La Libertad, 28 miles E, consists of a gray, sandy beach for the first 12 miles and also for the last 6 miles. The remaining part of the coast consists of a succession of projecting headlands and steep cliffs.

6.8 La Libertad (13˚29'N., 89˚19'W.) (World Port Index No. 15630), an open roadstead anchorage, is no longer used for commercial traffic, but is frequented by fishing vessels. A pier, 270m long, fronts the town, which is a popular resort, and has a depth of 5m alongside its head. A dangerous wreck lies about 5 miles WSW of La Puntilla.

6.9 La Concordia (13˚21'N., 89˚03'W.), located 17 miles ESE of La Libertad, stands at the entrance to a lagoon, about midway between La Libertad and the Rio Lempa. The Rio Jiboa, flowing from a lake in the interior, discharges into the sea about 1.5 miles W of this settlement. The entrance to the lagoon, which cannot be entered, is marked by heavy breakers.

Volcan San Vicente, shaped like truncated cone, rises 18.5 miles NNE of La Concordia. This peak is 2,173m high and appears as a double summit when viewed from the E or W. The lights of a city situated on the S slopes of this peak are conspicuous from seaward.

A conspicuous white house stands on a hill, 196m high, which rises 9 miles NNW of La Concordia.

Rio Lempa (13˚14'N., 88˚49'W.), the largest river in El Salvador, lies 16 miles E of La Concordia. It is navigable by river steamers, but has little commercial importance. The river

entrance may be recognized by some large trees, with white trunks and almost bare tops, standing in the vicinity and by discolored water, which extends up to 5 miles offshore.

The coast between the Rio Lempa and Punta San Juan, 20 miles E, is fringed by a belt of white sand backed by an extensive plain.

6.10 Bahia de Jiquilisco (13˚10'N., 88˚28'W.), lying 20 miles E of Rio Lempa, is entered between Peninsula San Juan and the SW extremity of Isla San Sebastian. This bay is fronted by an extensive shoal which is divided into two separate parts by a straight and narrow channel. The bay, within its entrance, is extensive, but most of the area is occupied by several large, low islands. Deep and narrow creeks surround almost all of these islands.

Bajos Lempa, two shallow shoals separated by a narrow channel, extend about 3 miles S from the coast on either side of the bay entrance. A bar, with a least depth of 4.3m, lies across the S part of this channel and joins the outer extremities of the two shallow shoals. A line of breakers usually forms over the shoals on either side of the bar at certain stages of the tide, even in good weather. Within the bar, several shoal patches, with depths of 4.6 to 5.5m, lie in the channel. About 1.5 miles above these shoals, which are centered 0.5 mile inside the bar, the channel narrows and the depths increase to 20m. In this narrow section of the channel, a strong current, accompanied by a choppy sea, is usually encountered.

The passage leading N and then W to Puerto El Triunfo (13˚16'N., 88˚33'W.) from the inner end of the entrance channel has sufficient depths to accommodate any vessel capable of crossing the bar. This town is a shrimping center and the only place of any importance in the bay. A local craft will meet and lead a vessel over the bar and into the bay provided prior arrangements have been made with the town authorities. Entrance into the bay should not be attempted without local knowledge.

The currents are regular and follow the direction of the channels. They usually attain rates of 3 to 4 knots in the entrance channel and set W, with a rate of 1 knot, outside the bar.

Good and sheltered anchorage can be taken in any part of the main channel between Isla Pajarito (13˚12'N., 88˚28'W.) and Isla Tortuga, 6.5 miles NW.

Caution.—Bajos Lempa, the shoals at the entrance, were reported to have extended farther seaward than charted.

The depths in the channel are subject to change.

A dangerous wreck is reported to lie about 1 mile S of the entrance.

An ammunition dumping ground, 10 miles wide, lies between 55 miles S and 60 miles SW of Bahia de Jiquilisco and may best be seen on the appropriate chart.

Rio Grande de San Miguel (13˚10'N., 88˚23'W.) flows into the sea about 4 miles E of Bahia de Jiquilisco. The entrance is obstructed by a bar, which is marked by breakers.

The coast between the river mouth and Punta Amapala, 28 miles E, consists of a sandy beach broken in places by cliffs. The currents off this section of the coast, which attain rates of 1.5 knots, set E for a period and then set in the opposite direction.

Caution.—The sandy beaches along this part of the coast give a very deceptive appearance to the land, especially at sunrise and sunset, causing it to appear nearer than it really is, and the surf to appear to break further from the shore than it actually does.

Golfo de Fonseca (13˚09'N., 87˚54'W.)

6.11 Golfo de Fonseca is entered between Punta de Amapala and Punta Cosiguina, 19 miles SE, and recedes about 30 miles NE to its head. The coasts of El Salvador and Honduras front the NW and NE shores of the gulf and contain Puerto La Union, Puerto Amapala, and Bahia San Lorenzo. The Estero Real, a navigable river, discharges into the SE side of the gulf and is bordered by Nicaragua.

Several prominent volcanic peaks rise on both sides of the gulf entrance and a number of high and conspicuous islands lie within the inner part. Punta de Amapala, the W entrance point, is low, flat, and fronted by a reef which extends up to 0.3 mile offshore. This reef, which is marked by breakers, has been reported (1994) to extend farther offshore than charted.

Volcan San Miguel (13˚25'N., 88˚18'W.), 2,132m high, rises 28.5 miles NW of Punta de Amapala and is very conspicuous.

Volcan Conchagua, with a double-peaked summit, rises close to the coast, 8 miles NE of Punta de Amapala. El Pinal, the tallest summit, is 1,280m high and partly wooded. The other summit is grass-covered and more rounded.

Volcan Consiguina, the tallest peak rising on the SE side of the entrance, is 872m high and stands 8.5 miles NE of Punta Cosiguina. On a clear day, this volcano can be seen from up to 70 miles offshore.

Winds—Weather.—Land and sea breezes blow regularly from the end of February to the beginning of May. The land breezes are light, blowing from between NE and NNW. The sea breezes blow from between S and SW. During the rainy season (May to October), the weather is often variable with heavy rain squalls from the E. However, light variable NE or NNE winds prevail when the weather is settled. Strong N winds may be expected from October to February, sometimes lasting for more than one week at a time. When these N winds are not blowing, light and variable winds prevail.

Caution.—Numerous fishing vessels may be encountered in the approaches to the bay.

6.12 Isla Conchaguita (13˚14'N., 87˚46'W.), 505m high, lies on the W side of the gulf, 8 miles NE of Punta de Amapala. The channel lying W of this island leads to La Union. A shallow flat extends 2.3 miles NNE from Isla Conchaguita to Isla Martin Perez (13˚17'N., 87˚44'W.).

Isla Zacatillo (Isla Punta Sacate) (13˚18'N., 87˚46'W.), irregular in shape, lies NW of Isla Martin Perez and is separated from it by Dyer Strait. Zacate Reef, with rocky heads awash in places, extends about 0.5 mile S from the SW end of this island. An isolated shoal, with a depth of 2.1m, lies in Dyer Strait, about 0.5 mile S of the reef. The channel lying between the reef and Punta Chiquirin forms the main approach to La Union. Colima Shoal, with a depth of 3.9m, lies on the W side of this channel, about 0.3 mile NNE of Punta Chiquirin. Several other detached shoals, with depths of 3.9 to 4.3m, lie close off the E and SE sides of the same point. Lights are

shown from structures standing on Punta Chiquirin and the NW side of Isla Zacatillo.

Bahia de la Union (13˚20'N., 87˚47'W.), large and sheltered, has shallow depths over most of its area. This bay is entered close E of Punta Chiquirin and extends about 8 miles in a NW direction. The N shore of the bay is fronted by a large drying flat and, with the exception of the approach channel, depths of 6m and less prevail over the remaining area.

Puerto La Union (13˚20'N., 87˚50'W.)

World Port Index No. 15600

6.13 Puerto La Union (Cutuco) derives its importance from having the best sheltered harbor in the country.

Winds—Weather.—In as much as the harbor is landlocked, the prevailing winds are usually light, but the heat is excessive. During the dry season (December to May), a strong wind blows from the N. During the rainy season, the Chubascos blow usually from the E.

Tides—Currents.—The tides rise about 3m at springs and 2m at neaps.

The currents are fairly regular except during the rainy season when the ebb flows somewhat longer than the flood. Off Punta Chiquirin, the ebb current sometimes runs at a rate of 3 knots and causes a heavy race which has the appearance of breakers. The current divides N of Isla Conchaguita. One branch sets N into the bay and the other branch sets NE between Isla Zacatillo and Isla Martin Perez.

Depths—Limitations.—The least depth in the approach to the port was reported (1992) to be 5.9m, but isolated depths of 3.7 and 4.9m lie on each side of the fairway.

Muelle Cutuco, the main cargo pier, is 320m long and provides 152m of berthage on either side. The N side of the pier has depths of 7.3 to 9.1m alongside and the S side has depths of 6.7 to 7.2m alongside. Generally, vessels of up to 180m in length, 29m beam, and 9.1m draft can be accommodated. It is reported that a maximum length of 168m is recommended due to the strong tidal currents.

An L-shaped pier, for the use of naval craft, fronts the E side of the town and extends about 0.2 mile NE. There is also a terminal facility for fishing vessels.

Aspect.—A prominent warehouse and a prominent light tower, 9m high, stand near the head of Muelle Cutuco.

Pilotage.—Pilotage is not compulsory, but is recommended particularly for vessels with drafts over 6.7m. Pilots can be contacted by VHF and board about 1.5 mile S of Punta Chiquirin. Night navigation is not recommended. Vessels should send an ETA at least 48 hours in advance.

Signals.—Flags displayed from the signal station at the outer end of Muelle de Cutuco indicate the allotted berth. A black ball displayed under the flag indicates slack water. Vessels entering or leaving the port are required to sound three long blasts on the whistle or siren.

Anchorage.—Vessels can anchor within a designated area, which may be best seen on the chart, lying 1.5 miles S of Punta Chiquirin. The area has depths of 11 to 13m over a bottom of mud and sand. Vessels are advised to anchor along a N/S line because a heavy sea is raised when the ebb current is opposed by a strong sea breeze.

Anchorage may be taken in convenient depths almost anywhere within the bay, clear of the mud flats.

Caution.—Submarine cables, which may best be seen on the chart, lie in the vicinity of the N part of the designated anchorage area and on the E side of the harbor.

The current setting off the pier usually attains a rate of about 3 knots at springs, but rates of up to 7 knots have been reported.

6.14 Isla Meanguera (13˚11'N., 87˚43'W.) lies near the middle of the Golfo de Fonseca, 9 miles within the entrance. This island has irregular, cliffy shores and is 494m high in its central part. Isla Meanquerita, a small islet, lies close off the SE extremity of this island and may safely be passed on either side.

Isla del Tigre (13˚16'N., 87˚38'W.), lying 3.5 miles NE of Isla Meanguera, is almost circular in shape and 783m high. The N and E sides of this island are fronted by extensive shallow flats and a bank, with shallow depths, extends up to about 2 miles seaward from its S side. A narrow channel lies along the W side of the island and leads to Puerto Amapala. A light is shown from a structure standing near the summit of the island.

Caracolita (Isla Paca) (Knob Island), low and heavily wooded, lies close off the W side of Isla del Tigre and a dangerous pinnacle rock, marked by tide rips, lies close off its W side.

Isla Zacate Grande, lying N of Isla del Tigre, is the largest island in the gulf and the only one not densely wooded to the summit.

6.15 Puerto Ampala (13˚18'N., 87˚39'W.), approached through a narrow channel, lies at the NW end of Isla del Tigre. The port is no longer used by commercial traffic as cargo operations were transferred to Puerto de Henecan. The small pier fronting the town is reported to be used by naval craft.

Bahia Chismuyo (13˚25'N., 87˚38'W.), lying 5 miles N of Puerto Amapala, is entered between Isla Zacate Grande and Isla Exposicion. Vessels may enter this bay through two narrow channels which lie E and W of the latter island and extend about 7 miles NNE to the head. The bay has no commercial facilities for large vessels and is frequented only by small craft. Entry should not be attempted without local knowledge. Good anchorage can be taken off the NW extremity of Isla Zacate Grande, but the currents are strong.

6.16 Bahia San Lorenzo (13˚18'N., 87˚30'W.) is entered between Isla del Tigre and Isla Raton, 6 miles E.

Puerto de Henecan (Puerto de San Lorenzo) (13˚24'N., 87˚27'W.) (World Port Index No. 15570) lies near the head of the bay, 1.5 miles SE of the town of San Lorenzo.

Depths—Limitations.—An approach channel, with a dredged depth of 8.5m, leads 16 miles NNE to the harbor. Due to silting, this channel has a dredged depth of only 7.3m. The fairway is narrow, tortuous, and constantly shifting.

The main pier, which provides four berths, is T-shaped and 296m long. The N inner berth is 134m long and has a depth of 6.7m alongside. The S inner berth is 116m long and has a depth of 6.7m alongside. The outer face, which forms two berths, has depths of 8.9 to 10m alongside. Vessels of up to

176m in length, 32m beam, and 7.1m draft can be accommodated.

Aspect.—The approach fairway is marked by lighted buoys and beacons. An outer fairway lighted buoy marks the seaward entrance of the channel.

A conspicuous hill, 170m high, stands on the E side of Isla Zacate Grande.

Pilotage.—Pilotage is compulsory. Pilots can be contacted by VHF and board in the vicinity of the outer fairway lighted buoy, about 6 miles E of Isla Meanguera (13˚11'N., 87˚43'W.). Vessels should send an ETA at least 24 hours in advance. Berthing is carried out during daylight hours only.

Anchorage.—Vessels can anchor in a depth of 8m about 0.9 mile SSW of the main pier.

Caution.—The tidal currents in the approach channel are strong and are reported to set across the fairway.

It was reported (1994) that many of the navigational aids were out of position or missing.

Evening fog is prevalent.

6.17 Estero Real (12˚55'N., 87˚23'W.), a broad and navigable river, rises near Lago de Managua and flows into the head of the bay, 15 miles SE of Punta El Rosario. It can be ascended by vessels with drafts of up to 3m for a distance of about 30 miles.

A bar, which lies about 6 miles SSW of Punta Condega (13˚06'N., 87˚26'W.), was reported (1992) to have a least depth of 5m. Above this bar, the depths are sufficient to accommodate vessels capable of entering as far as the junction of the Estero Palomina, about 20 miles above the entrance. Above this junction, the depths decrease rapidly.

Entrance to the river should not be attempted without local knowledge as the currents are very strong at times.

6.18 Punta El Rosario (13˚05'N., 87˚35'W.), located 8.5 miles WSW of Punta Condega, is low and sandy. The anchorage lies in the NW part of the bay and E of the point. This anchorage area, which is 6 miles long and 2.3 miles wide, is well-sheltered and has depths of 9 to 16m. It is frequently used by vessels bound for Estero Real.

At a position about 2 miles E of Punta El Rosario, the ebb and the flood set NW and SE, respectively, at rates of up to about 4 knots at springs.

Farallones de Consiguina (Islas Farallones) (13˚05'N., 87˚41'W.), a group of light-colored rocks fringed by shoals, lies 6 miles W of Punta El Rosario. The largest rock of the group has a rounded top, whereas the others are sharp and jagged. When seen from the S, they appear as one large dome with pinnacle rocks on either side. Vessels are advised to give this group of dangers a berth of at least 1 mile. A shoal, with a depth of 13.1m, is reported to lie about 2.8 miles WSW of the group.

Caution.—The swell off this coast causes breakers along the shore and on Farallones de Consiguina.

Punta Consiguina (12˚55'N., 87˚41'W.), the SE entrance point of the Golfo de Fonseca, is located 11.5 miles SW of Punta El Rosario. It consists of a series of cliffs which rise inland to Volcan Cosiguina.

Caution.—A dangerous wreck is reported to lie about 1 mile WSW of Punta Consiguina.

An obstruction lies about 8 miles SE of Punta Consiguina and a shoal patch, with a depth of 4.8m, is reported to lie about 2 miles N of it.

Table of Contents